

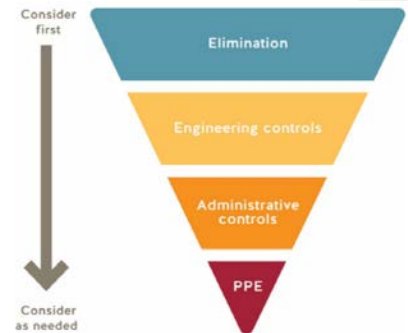


BCIT COVID-19 SAFETY PLAN ACADEMIC SPACES

The BCIT COVID-19 Go-Forward Plan outlines the risk assessments, control measures, and the organizational process for our safe return to campus. All returning programs/courses must adhere to this process. Please refer to the [BCIT COVID-19 Go-Forward Plan](#) for additional information.

CONTACT INFORMATION

Course/Program Name:	Mechatronics and Robotics Technology Diploma (60 students)		
Proportion of program offered on campus:	20%		
Start date:	Sept 14, 2020	End date:	Dec 4, 2020
# of students:	65	# of employees:	6
Completed by:	Name Brent Dunn	Position Associate Dean	Date Sept 2, 2020



ROOM INFORMATION

In this section, please identify all of the rooms that will be used by this returning program/course. NOTE: Common areas are covered by the BCIT COVID-19 Go-Forward Plan.			
Campus/ Building	Room Number <small>Floor Plans found here</small>	Type of Space <small>Include washrooms and breakout rooms</small>	Capacity <small>Current capacity due to COVID-19</small>
Burnaby SW3	SW3-1985	Electronics lab	10 students, 1 instructor
Burnaby SW9	SW9-115	Robotics lab	6 students, 1 instructor

RATIONALE FOR ON-CAMPUS ACTIVITY

Please provide a short description explaining the need for students to be on campus. Your narrative should be focused on the practical elements of the program or activity that are critical to achieving learning outcomes, and why on campus components cannot be replicated in an online or alternative environment (e.g. student bringing learning equipment home).



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Hands-on training is required in many of our programs due to the practical nature of the programs. Students cannot access specialized equipment outside of the classroom. See justification in the plan for each learning space.

CONTROL MEASURES

COVID-19 SAFETY PLAN: CONTROL MEASURES CHECKLIST

Directions for completing a Safety Plan:

1. First step of this process is to review the [BCIT COVID-19 Go-Forward Plan](#) as the overall planning document for this process.
2. Use this checklist as a tool to assess COVID-19 control measure preparedness for students and employees and the spaces they will be using. Refer to the BCIT COVID-19 Go-Forward Plan for standardized safety guidelines and procedures.
3. For each control measure, state the details. If the control measure is a 'No' or 'NA', please provide a brief explanation.
4. The manager requests all PPE requirements by submitting this draft Safety Plan to the PPE@bcit.ca.
5. Implement all the safety measures in this Safety Plan.
6. The manager completes a site visit to ensure all control measures and safety supplies are in place.
7. The manager signs the completed Safety Plan and submits it to returntocampus@bcit.ca for approval.
8. Once approved, the COVID-19 Safety Plan is posted in all work areas identified within this plan.

Note: The workspaces cannot be used until all applicable control measures are in place and Safety Plan is approved. For additional resources the [Risk Assessment Controls Guidance and Hierarchy of Controls](#). For assistance email ssemohs@bcit.ca.

#	Control Measure	Yes	No	NA	Details (as per Directions)
ELIMINATION					
1.	Room(s) set up to allow for 2 metres physical distancing during instruction and practice.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exceptions allowed as per BCIT COVID-19 Go-Forward Plan , Risk Matrix Summary (explain):

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#	Control Measure	Yes	No	NA	Details (as per Directions)
	Note: Contact returntocampus@bcit.ca for room capacity and layout if needed.				Please see individual room plans for barriers where 2m distancing cannot be maintained.
2.	Demonstration, work and assessment stations are set-up to allow for 2 metres physical distancing.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Exception allowed as per BCIT COVID-19 Go-Forward Plan, Risk Matrix Summary (explain):</i> Please see individual room plans for barriers where 2m distancing cannot be maintained.
3.	Identified area(s) where students wait outside of teaching space until allowed inside by instructor.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Classrooms will be opened 10 minutes prior to start of class and students will be instructed to maintain 2m distancing when entering the space. Please see individual room plans for room management instructions.
4.	Work has been scheduled to minimize numbers of individuals on campus at one time.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	For all programs, sets are further divided in half or in thirds to match the capacity of the spaces. Where possible, students are scheduled to minimize trips to campus.
5.	In shared spaces, safety protocols have been put in place to reduce close contact between users.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No shared spaces. Students are working at their own workstation for the duration of the lab.
6.	Movement within the room is identified, such as with directional arrows, for walkways and entrances/exits.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Signs or arrows on the floor identifying directions.</i> Markings will be placed. Students will be required to exit in sequential order to maintain social distance.
7.	Water fountains are put out of service, and only touchless water bottle filling station available.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No water fountains
8.	Mobile fans have been removed or put out of service.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fans
7.	Washrooms have been identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There are no washrooms within the lab spaces - all washrooms are in common spaces.
8.	Break area(s) for student use have been identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	When students are on campus for a short duration, a break has not been planned. In labs where students are working at workstations/desks, students will be encouraged to take breaks and/or eat lunch at their individual workstations. Hand sanitizing will be available.
9.	Break areas for employee use have been identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Faculty will take breaks in their offices and in the staff lounge. These areas are covered under the Administrative Safety Plan.
10.	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ENGINEERING CONTROL MEASURES					
11.	Barriers are implemented to separate work areas or walk ways, when physical distancing not practical.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Please see individual room plans for barriers where 2m distancing cannot be maintained.
12.	Barriers are stable and do not introduce other safety hazards, e.g. tripping.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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#	Control Measure	Yes	No	NA	Details (as per Directions)
13.	The impact on ventilation requirements have been considered if there's been a significant use change for the instructional space.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complete a Facilities and Campus Development work requisition for assessment, as needed. The usage has not changed for any of the spaces.
	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SIGNAGE (ADMINISTRATIVE) <i>Signage is available @ BCIT online Inventory. Guidelines for posting signs are available on ShareSpace.</i>					
13.	Posted: Physical distancing (2 m) sign(s) Item 1A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.	Posted: Hand washing sign(s) Item 29B	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No sinks in the spaces
15.	Posted: Health screen sign(s) Item 3C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16.	Posted: Hand washing sink location sign(s) Item 14A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No sinks in the spaces.
17.	Posted: Hand sanitizing station location sign(s) Item 13A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18.	Posted: Protect yourself sign(s) Item 21A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19.	Posted: Occupancy limit of this room sign(s) Item 37A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SW9-115 (7 max: 6 students + 1 instructor); SW3-1985 (11 max: 10 students + 1 instructor)
20.	Posted: Other signs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Please list:</i>
ORIENTATION AND TRAINING (ADMINISTRATIVE)					
21.	Routine safety discussions held to review control measures and safety protocols.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22.	All students have completed the online COVID-19 Pandemic On-Campus Guidelines training.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>How will compliance be checked:</i> Check on-line data base for student compliance prior to first lab session.
23.	COVID-19 safety Site orientation for students has been developed and posted in the Learning Hub.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Procedure for orientation found here. Student COVID-19 Orientation Checklist found here.</i>
24.	All employees have completed the online BCIT Pandemic Exposure Control Plan Training .	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25.	All employees have completed the online New Employee Orientation module .	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>New and Returning Employee Orientation Checklist found here. Each employee to save the checklist to their online New Employee Orientation course</i>
26.	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
RULES AND GUIDELINES (ADMINISTRATIVE)					
27.	All unnecessary and self-serve items have been removed from the spaces. <i>e.g., pens, paper, etc.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>All supplies asked for prior to class and stocked at each workspace</i>
28.	Doors that students are to use to enter and exit have been clearly identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Signs or arrows on the floor</i>

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#	Control Measure	Yes	No	NA	Details (as per Directions)
29.	Handouts, papers, and items are not physically provided to students.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All materials are electronic and available online.
30.	Students have dedicated tools/equipment, e.g., items are not shared between students.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No sharing during a class session. There are no multiple session occurring in a single day, so inter-session cleaning during the middle of the day is not required. Equipment will be cleaned between uses.
31.	If cleaning common touch points or tools/equipment not practical, then it is identified when hands are washed/sanitized before and after use.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32.	Work spaces/stations are dedicated for an individual or group use and not shared with others.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>No sharing during a class session. All equipment to be cleaned between sessions.</i>
33.	Single-use (disposable) products are used where feasible.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34.	Measures are in place to accommodate student sick at home.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Accommodation plan: Students who miss a lab will be given an alternate assignment or allowed to make up the lab at a later date.</i>
35.	Procedures in place to screen students on a daily basis.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>The health screen poster is available for reference and is posted on building doors. Students and employees are expected to self assess daily, and the BCCDC self-assessment tool can be used to support this.</i>
36.	There is a procedure in place if a student or employee becomes ill on campus.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Refer to the COVID-19 Pandemic Scenario Playbook for more information. If the person is reporting symptoms, ask them to avoid others and return home. If they require immediate medical attention, call First Aid and 911.</i>
37.	There are procedures in place if a student or employee travels before coming to campus, or has been in close contact with someone who has tested positive for COVID-19.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Refer to the COVID-19 Pandemic Scenario Playbook for more information. Confirm if the person is aware of self-isolation requirements and protocols.</i>
38.	Provisions made for students to maintain same lab/class cohort throughout the Term.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Students are normally grouped into sets of 18 to 20 and will stay in their cohort (set) for the term. These sets are further subdivided into maximum groups of 6 or 10, depending on the capacity of the spaces and students will stay with the same smaller subset for the course.
39.	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
PERSONAL PROTECTIVE EQUIPMENT (PPE). Refer to the PPE Flowchart to determine what PPE is required for COVID-19 purposes.					
40.	Appropriate PPE for the hazards of employee and student tasks are available to be provided (non-COVID-19 related ppe).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>List the ppe and tasks/activities it is required for, and provide the quantity and unit of measure, if applicable (e.g. 2 boxes of 20 each box): Appropriate non-Covid PPE for the lab spaces and activities are unchanged from pre-Covid PPE requirements. Students are responsible for providing their own basic PPE such as safety glasses and safety footwear. SW9-115 requires only</i>

COVID-19 SAFETY PLAN ACADEMIC SPACES

#	Control Measure	Yes	No	NA	Details (as per Directions)						
					safety glasses and footwear; SW3-1985 does not require non-COVID PPE. The program areas have enough PPE on hand for the term.						
41.	Training is provided for the above PPE to students and employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	This is part of our normal operation. Instruction is given at the first lab session of the course and/or in safety courses. Instructors enforce PPE use continuously throughout each course.						
42.	Appropriate PPE for COVID-19 is available to be provided to students and employees. Supply requests emailed to ppe@bcit.ca .	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p><i>Based on circumstances allowed for in the BCIT COVID-19 Go-Forward Plan, Risk Assessment Matrix Summary.</i></p> <p><i>List PPE and tasks/activities required for and provide the quantity and unit of measure, if applicable (e.g. 2 boxes of 20 each box):</i></p> <ul style="list-style-type: none"> • See PPE requirements within each lab plan. 						
43.	PPE safe donning, doffing, disposal, and disinfecting instructional materials are available for students and employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p><i>Post applicable signs in a visible location if ppe required.</i></p> <p><i>Use the Student Orientation checklist to assist orientation/training by instructors.</i></p> <p><i>Use the Employee Orientation checklist to assist orientation/training by their supervisors.</i></p> <p>In most spaces, COVID-related PPE is not required. In areas where COVID-related PPE is required such as masks and gloves, signs will be posted.</p> <ul style="list-style-type: none"> • Please see individual room plans for more details and 46 below. 						
44.	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
CLEANING											
45.	Facilities is aware of the cleaning needs for the area. Facilities work requests have been submitted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p><i>Cleaning includes common touch points and appropriate frequency for the area. This includes high touch areas. Provide FCD work request number(s)</i></p> <p>Specific non-electrical equipment to be cleaned between lab sessions. This will be limited to table surfaces, chairs, doors and door handles. Cleaning spray must not be used on the Robots and Electrical Equipment.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Room</th> <th style="text-align: left;">Request</th> </tr> </thead> <tbody> <tr> <td>SW3-1985</td> <td>1452433</td> </tr> <tr> <td>SW9-115</td> <td>1452432</td> </tr> </tbody> </table>	Room	Request	SW3-1985	1452433	SW9-115	1452432
Room	Request										
SW3-1985	1452433										
SW9-115	1452432										
46.	Training will be provided to faculty and students performing cleaning duties and cleaning materials have been provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p><i>Cleaning Standard Operating Procedures have been located here. What are the cleaning products/materials:</i></p> <p><i>What ppe is required:</i></p> <p>At the end of each lab session, students will clean all electronic/electrical equipment or other such equipment deemed sensitive. Such equipment will be cleaned by students or by faculty to prevent damage and disposable gloves will be required to apply the disinfectant.</p>						

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#	Control Measure	Yes	No	NA	Details (as per Directions)
					<ul style="list-style-type: none"> Please see individual room plans for more details
47.	Assessment of sufficient number of hand wash stations conducted, and an appropriate number of handwashing stations are available	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
48.	Handwashing station(s), stocked, easily accessed, and have been identified to students and employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Sink Location: No sinks in labs. Washrooms in common spaces have sinks.</i> <i>Stocked with soap Y <input checked="" type="checkbox"/> N <input type="checkbox"/> paper towel Y <input checked="" type="checkbox"/> N <input type="checkbox"/></i>
49.	Hand sanitizing station(s), stocked, and have been identified to students and employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ABHS (Alcohol-Based Hand Sanitizer): Location(s) Hand sanitizer will be available in all spaces. Where students are working at individual stations, sanitizer will be made available at each station to encourage students and instructors to sanitize before and after touching shared equipment e.g. when the instructor has to touch student work or tools to demonstrate technique. <i>Will hand sanitizer be refilled by department: Y <input checked="" type="checkbox"/> N <input type="checkbox"/></i> <i>If No, describe: Hand pumps will be used and replenished with new bottles when empty.</i>
50.	All Safety Data Sheets (SDS) and cleaning procedures used are found here .	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>If not, describe: SDS are always available for materials normally used in the lab. SDS sheets are not provided for special cleaners that will be used by cleaning contractors.</i>
51.	The area(s) have been decluttered so that cleaning is simplified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
52.	Barrier cleaning process has been arranged if the barrier(s) could become contaminated.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Barriers can become contaminate if they are a touch point or if the contaminated with droplets by e.g. coughing or sneezing. Barriers are arranged so students will not need to touch them.</i>
53.	Common touch points and tools/equipment that must be shared are identified and cleaned between students and classes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Cleaning/sanitizing procedures for common touch points and shared items are posted e.g. shared machinery, equipment, tools, electronic measurement equipment etc.</i> <i>Identify who will clean and how often (e.g. staff and/or students):</i> Varies by space. In some cases, students will clean benches or shared equipment. In other spaces, facilities work requests have bene submitted for between-class cleaning. <ul style="list-style-type: none"> See plan for each room.
54.	Storage space for personal articles have been identified and are cleaned regularly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Who will clean:</i> Varies by space. Students and/or cleaners. <i>Where is the storage:</i> Students will take their supplies with them to their workspaces. <ul style="list-style-type: none"> See plan for each space for more details
55.	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

AUDIT AND CONTINUOUS IMPROVEMENT



COVID-19 SAFETY PLAN ACADEMIC SPACES

#	Control Measure	Yes	No	NA	Details (as per Directions)
56.	There is a plan to conduct regular inspections of all control measures and safety protocols to ensure they are in place.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Ensure this COVID-19 Safety Plan is posted. Who will conduct these inspections and how often? Faculty will perform inspections on a weekly basis.</i>
57.	Audits of inspections are planned to ensure that control measures continue to be effective.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Who conduct the audits and how often? Program heads will audit on a monthly basis.</i>

APPROVAL

All COVID-19 risk control measures for this campus activity are in place.			
Manager	Name Brent Dunn	Position Associate Dean	Date Sept 29, 2020
EOC	Name <i>Glen Magel</i>	Position EOC director	Date October 2, 2020

DOCUMENT HISTORY

	Approval by EOC	Glen Magel, EOC Director
Sept 29, 2020	Initial submission	Brent Dunn, Associate Dean



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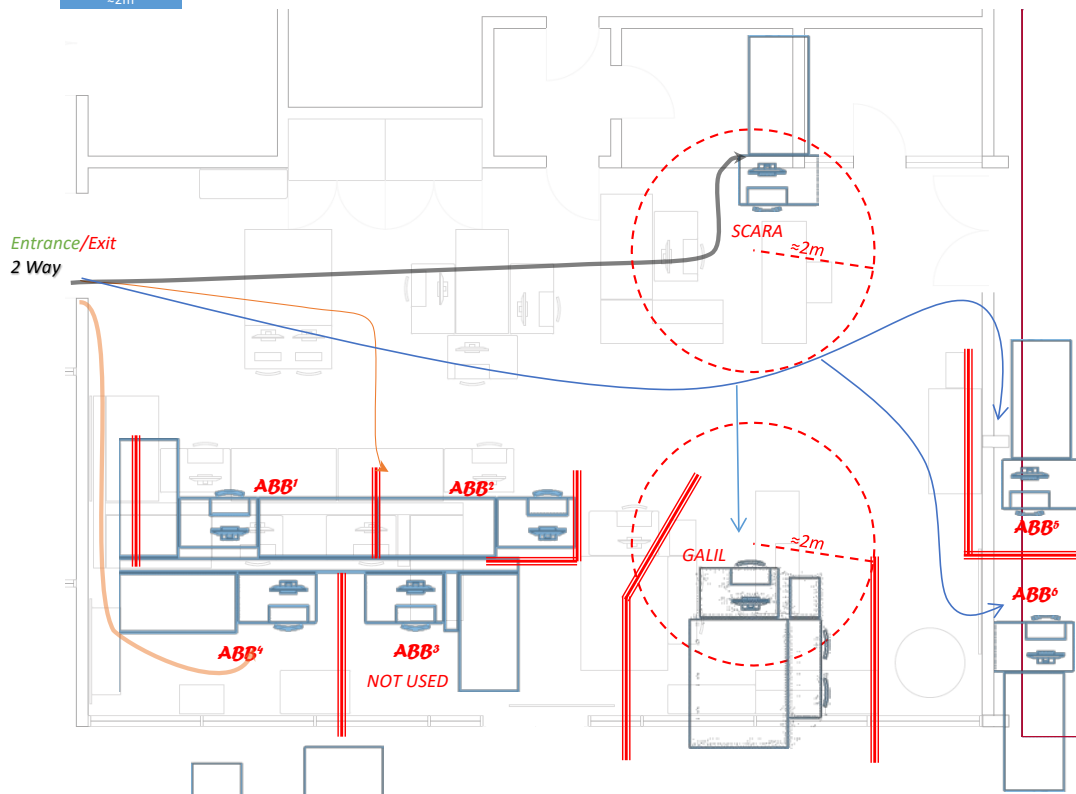
Mechatronics-ROBT 3341: SW09-115

SW9-115 is the robot application laboratory. It is home to 6 ABB robot stations and 2 mechatronics work stations, referred to as SCARA and GALIL. Not all the ABB work station are utilized with ABB[3] being unused, ABB[1,2] refer to the same ABB work station.

To maintain a physically distanced path from the room entry to the workstations, a physically distanced pathway must be established as shown with the three coloured arrows. Max capacity would see students at all stations. All remaining pieces of equipment will be moved to the perimeter of room to ensure path is clear of obstruction. To enable ABB's physical distance, the entire project quad should move right to provide a 2-metre buffer.

==== Acrylic or similar barrier

≈2m



- Commented [GS1]:** Note that ABB 5 and ABB 6 are contingent on being operational. Brian to comment on how far away we are on that.
- Commented [B2]:** ABB5 should be ready to go early in the fall term. ABB6 will not be ready until later so probably won't be used during the term, depending on workload.
- Commented [B3]:** I suggest putting a partition on the left of ABB1 between the new walkway (where the conveyor was) and ABB1, so the quad can be left where it is.
- Commented [GS4]:** This layout is not current as it does not capture the new reno that was complete in 2018.
- Commented [GS5]:**



COVID-19 SAFETY PLAN ACADEMIC SPACES

Use Description

Course	ROBT 3341 Robot Applications
Program	Mechatronics and Robotics
Number of students	6 max (3 lab sessions/week, students will attend every second week)
Description of Equipment used	<p>ABB Labs:</p> <ul style="list-style-type: none">• Desktop computers• Industrial Robot Pendant• ABB Robot• Conveyor Belt• I/O Interface Board• Hand tools <p>Industrial Robot arms and controllers, Industrial motion controller, electrical connection/interfacing equipment, multimeters, small hand tools.</p> <p>SCARA:</p> <ul style="list-style-type: none">• Desktop computers• Power Supply• Scara Robot arm• Multimeter <p>GALIL:</p> <ul style="list-style-type: none">• Desktop computers• Power Supply• Cartesian Overhead robot• Ruler/Vernier Calipers• Drill Head
Why do students need to use this space? What's special that cannot be done at home?	Students require access to specialized, expensive robotics equipment. Students need access to the actual lab equipment to acquire competency in hands-on troubleshooting, system modification skills and to connect/interface industrial controllers to other devices. Simulation cannot emulate all the possible scenarios which are accommodated with hands-on labs with real equipment.




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SW9-115 Timetable

ROOM	Mon	Tue	Wed	Thu	Fri
SW9-115	10:30AM → 1:20PM	2:30PM → 5:20PM	11:30AM → 2:20PM		

Barriers

Location	Quantity	Size (WxH inches)	Mounting (Free standing, table top, etc.)	Opaque/Clear	Comment
Shown in red in layout figure above. 					https://www.uline.ca/BL_582/Welding-Screens https://www.uline.ca/Product/Detail/H-6704/Welding/Clear-Screen-6-x-8'



COVID-19 SAFETY PLAN ACADEMIC SPACES

PPE

Item	Quantity:	Consumption rate	Location	Comment
Hand sanitizer pump	8	3ml/ application, 7 persons * 2 applications/session 3 sessions 126 ml/week	At lab door sanitizing location At each active workstation + At instructor table	Used upon entry and prior to exit of lab Used before and after manipulating lab equipment and personal items
Isopropyl Alcohol wipes	~7 x Box 100	Per station: 3 wipes/station/session 3 sessions/week 12 wipes/week/station 12*10weeks = 108	Box at each workstation + At instructor table	Cleaning of personal items and sensitive electronic/robotic equipment.
Nitrile gloves (medium)	2xBox 50	7 pair/session * 10 sessions		For applying ISA
Nitrile gloves (large)	2xBox 50	7 pair/session * 10 sessions		For applying ISA
Face Coverings	2x Box 50		At sanitizing station	Students are expected to provide their own face coverings, however, spare face coverings will be available if needed



COVID-19 SAFETY PLAN ACADEMIC SPACES

Procedures

Include all COVID-related safety procedures (room management, student movement, cleaning, hygiene) that will be shared with students

1. Room Management Procedure

- **Entry and Sanitization**

- The session instructor will unlock the lab door at least 10 minutes prior to the start of the lab.
- Students will be required to use room entry hand sanitizer prior to transit to their assigned station. Barriers, walkways, and spacing maintain social distancing as students move to and from their workstations.

- **Activity and Movement during lab session**

- Students will be instructed to remain within their marked workstation space at all times while in the lab. Requests to leave their assigned space will be managed by the instructor.
- Any student or instructor moving about the room will be required to wear a mask.
- When the instructor is required at a student workstation, both parties must be masked, and work as far as possible from each other, while maintaining space with neighbouring students.
- One student at a time will be permitted to leave the lab room for a washroom break or similar activity. This will require coordination by the instructor.
- Students will be permitted to drink water from a closable-top container of water.

- **Lab completion and exiting the room**

- Upon completion of the lab activity, students will be asked to wipe down touch points on equipment using ISA wipes (on sensitive electronics/robot equipment). They will be instructed to sanitize their hands with hand sanitizer when complete and are ready to leave the lab room.
- Students assigned to ABB work stations will perform ABB P-Start prior to sanitizing their stations.
- Students will exit the lab room in an orderly manner to maintain social distancing.

2. Procedures for cleaning equipment/surfaces

- Gloves should be worn when using ISA wipes.

- **Sanitizing ABB Robot Pendants and Controller**

- Students will use ISA wipes to sanitize Robot Pendants, Robot Controller Buttons, Robot Arm
- Students will use ISA wipes to sanitize ABB[1,2] Station Conveyor belt touch points; The electrical I/O interface connector bus will be de-energized and wiped with ISA wipes

- **Sanitizing SCARA Work Station**



COVID-19 SAFETY PLAN ACADEMIC SPACES

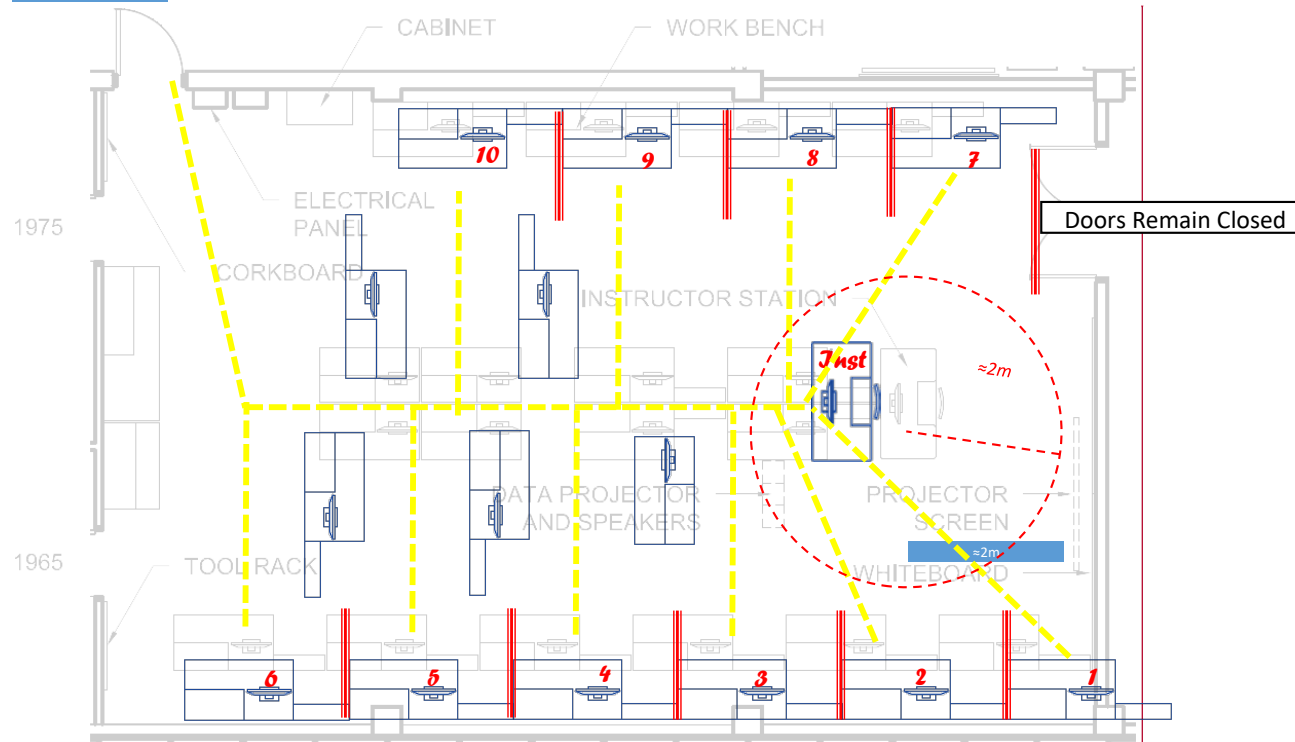
- Students will use ISA wipes to sanitize the SCARA Arm, plastic pen drawing surface and power supply buttons.
- **Sanitizing GALIL Work Station**
 - Students will use ISA wipes to sanitize any surface of the GALIL robot that was handled including the controller and linear axis.
- **Sanitizing Computers**
 - Students will wipe down keyboard, mouse, and other touch points using ISA wipes.

COVID-19 SAFETY PLAN ACADEMIC SPACES

Mechatronics-ROBT 3356: SW3-1985

The capacity for this computer-electronics lab for the 2020 Fall ROBT 3356 term is 10 students, provided barriers can be installed in noted locations. The 10 workstations contain a desktop PC and electronics measurement equipment. Idle workstations can be utilized to compliment recommended barrier locations. During the fall term, the adjacent electronic boards (shallow panel) attached to most workstations will not be utilized. If an instructor station is necessary, the instructor will need to vacate their station to allow movement of students 1, 2, 3, 7, 8. With this density of students, line demarcations are recommended.

==== Acrylic or similar barrier
 ≈2m



Commented [GS6]: Are the center benches really required to be rotated as shown? Is that to facilitate the instructor's bench?
 Benches 7, 8 will not be necessary since the enrolled students will likely be > 24. Therefore 3 sets. So benches 1:6, 9:12 will suffice.



COVID-19 SAFETY PLAN ACADEMIC SPACES


Use Description

Course	ROBT 3356
Program	Mechatronics and Robotics
Number of students	10 max (2 lab sessions/week, students attend lab every second week)
Description of Equipment used	Each individual work bench is equipped with power supplies, multi-function oscilloscopes, multimeters, and function generators. In addition students will bring their own single board microcontroller units and in many cases their own laptops.
Why do students need to use this space? What's special that cannot be done at home?	Students require access to specialized test and measurement equipment so that they can build and verify digital hardware systems. Students need access to the actual lab equipment to acquire competency in hands-on troubleshooting, system modification skills. Simulation cannot emulate all the possible scenarios which are accommodated with hands-on labs with real equipment.

SW3-1985 Timetable

ROOM	Mon	Tue	Wed	Thu	Fri
SW9-1985			11:30AM → 2:20PM	2:30PM → 5:20PM	

Barriers

Location	Quantity	Size (WxH inches)	Mounting (Free standing, table top, etc.)	Opaque/Clear	Comment
Shown in red in layout figure above. 					https://www.uline.ca/BL_582/Welding-Screens https://www.uline.ca/Product/Detail/H-6704/Welding/Clear-Screen-6-x-8'



COVID-19 SAFETY PLAN ACADEMIC SPACES

PPE

Item	Quantity:	Consumption rate	Location	Comment
Pump bottle hand sanitizer	12	3ml/ application, 11 persons * 2 applications/session 2 sessions 132 ml/week	At lab door sanitizing location At each active workstation + At instructor table	Used upon entry and prior to exit of lab Used before and after manipulating lab equipment and personal items or returning from washroom
Isopropyl Alcohol wipes	~11 x Box 100	Per station: 3 wipes/station/session 2 sessions/week 6 wipes/week/station 6*10weeks = 60 wipes/station	Box at each workstation + At instructor table	Cleaning of sensitive electronic/robotic equipment.
Nitrile gloves (medium)	~2xBox 50	11 pair/session * 10 sessions		For applying ISA
Nitrile gloves (large)	~2xBox 50	11 pair/session * 10 sessions		For applying ISA
Face Coverings	~2x Box 100	11 stations*2sessions/week * 10 weeks	At sanitizing station	Face coverings required



COVID-19 SAFETY PLAN ACADEMIC SPACES

Procedures

Include all COVID-related safety procedures (room management, student movement, cleaning, hygiene) that will be shared with students

Room Management Procedure

- **Entry and Sanitization**
 - The session instructor will unlock the lab door at least 10 minutes prior to the start of the lab.
 - Students will be required to use room entry hand sanitizer prior to transit to their assigned station. Barriers, walkways, and spacing maintain social distancing as students move to and from their workstations.
- **Activity and Movement during lab session**
 - Students will be instructed to remain within their marked workstation space at all times while in the lab. Requests to leave their assigned space will be managed by the instructor.
 - Any student or instructor moving about the room will be required to wear a mask.
 - When the instructor is required at a student workstation, both parties must be masked, and work as far as possible from each other, while maintaining space with neighbouring students.
 - One student at a time will be permitted to leave the lab room for a washroom break or similar activity. This will require coordination by the instructor.
 - Students will be permitted to drink water from a closable-top container of water.
- **Lab completion and exiting the room**
 - Upon completion of the lab activity, students will be asked to wipe down touch points on equipment using ISA wipes (on sensitive electronics/robot equipment). They will be instructed to sanitize their hands with hand sanitizer when complete and are ready to leave the lab room.
 - Students will exit the lab room in an orderly manner to maintain social distancing.

Procedures for cleaning equipment/surfaces

- Gloves should be worn when using ISA wipes.
- **Sanitizing Test and Measurement Equipment**
 - Students will use ISA wipes to sanitize oscilloscope control knobs, probes (if instrument used).
 - Students will use ISA wipes to sanitize multimeter control knobs, probes (if instrument used).
 - Students will use ISA wipes to sanitize power supply, function generator control knobs (if instrument used).
- **Sanitizing Computers**
 - Students will wipe down keyboard, mouse, and other touch points using ISA wipes.